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- (71) Applicant (for FR only): **SERVICES PETROLIERS SCHLUMBERGER** [FR/FR]; 42, rue Saint-Dominique, F-75007 Paris (FR).
- (71) Applicant (for AT, AU, AZ, CO, DE, DK, HR, ID, IE, IT, KP, KR, KZ, MX, NO, NZ, PH, PL, RO, RU, SK, TM, UA, ZA only): **SCHLUMBERGER TECHNOLOGY B.V.** [NL/NL]; Parkstraat 83-89, NL-2514 JG The Hague (NL).
- (71) Applicant (for all designated States except AE, AT, AU, AZ, BR, CA, CG, CM, CN, CO, CZ, DE, DK, DZ, EC, EG, FR, GA, GQ, HR, ID, IE, IN, IT, KP, KR, KZ, LT, MA, MX, NA, NE, NO, NZ, OM, PG, PH, PL, RO, SD, SK, SY, TD, TM, TN, TR, TT, UA, US, VN, ZA): **SCHLUMBERGER HOLDINGS LIMITED**; P.O. Box 71, Craigmuir Chambers, Road Town, Tortola (VG).
- (71) Applicant (for CA only): **SCHLUMBERGER CANADA LIMITED** [CA/CA]; 525-3rd Avenue S.W., Calgary, Alberta T2P 0G4 (CA).
- (71) Applicant (for CN only): **SCHLUMBERGER OVERSEAS S.A.** [PA/PA]; 8 Calle Aquilino de la Guardia, Panama City (PA).
- (71) Applicant (for AE, OM, SD, SY, TR only): **SCHLUMBERGER OILFIELD ASSISTANCE LIMITED**; Craigmuir Chambers, Road Town, Tortola (VG).
- (71) Applicant (for BR only): **SCHLUMBERGER SURENCO S.A.** [PA/PA]; 8 Calle Aquilino de la Guardia, Panama City (PA).
- (71) Applicant (for TT only): **SCHLUMBERGER SERVICES LIMITED**; P.O. Box 438, Tortola (VG).
- (71) Applicant (for EG only): **SCHLUMBERGER SEACO INC.** [PA/PA]; 8 Calle Aquilino de la Guardia, Panama City (PA).
- (71) Applicant (for CG, CM, CZ, DZ, EC, GA, GQ, IN, LT, MA, NA, NE, PG, TD, TN, VN only): **PRAD RESEARCH AND DEVELOPMENT NV** [NL/NL]; De Ruyterkade 62, Willemstad - Curacao (AN).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **BARLET-GOUEDARD, Véronique** [FR/FR]; Résidence La Baleine, 3, rue du Mérou, F-92290 Chateaufort Malabry (FR). **GOFFE, Bruno** [FR/FR]; 11, bis rue Larrey, F-75005 Paris (FR).
- (74) Agent: **ETUDES & PRODUCTIONS SCHLUMBERGER**; 1, rue Henri Becquerel, BP 202, F-92142 Clamart Cedex (FR).
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(54) Title: **HIGH TEMPERATURE CEMENTS**

(57) Abstract: A method of designing a cement composition comprises determination of the temperature to which the composition will be exposed in situ; determination of a stable, thermodynamic equilibrium composition of a $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$ (CASH) mineral system in the [xonotlite/wollastonite]-grossularite-anorthite or grossularite-anorthite-quartz triangles of the Si-Ca-Al phase diagram with a possible contribution of iron and/or magnesium, analogous to the cement when set, at the determined temperature; determining proportions of cement and mineral oxides required to provide a mixture having the determined composition; and defining a series of particulate materials of predetermined particle sizes and densities, comprising cement and mineral oxides in the determined proportions.

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